ABSTRACT

A method of controlling a premix compression self-igniting internal combustion engine in which intake air and fuel are mixed in advance in a combustion chamber and the mixture is self-ignited by compression. Optimal self-ignition timing in accordance with operation condition can be obtained with the method for improved combustion. An exhaust valve (9) is temporarily reopened during a compression stroke, and timing of closing the reopened valve is variable, so that timing of the closure is varied for an effective compression ratio at which optimal self-igniting timing can be obtained at each operation region. A valve closure timing map for the exhaust valve reopening is formed from an engine speed and load, and closure timing of the exhaust valve (9) is varied based on the map. The closure timing of the exhaust valve (9) is varied such that an effective compression ratio is increased in an operation region where the load is small, and the ratio is reduced with an increase in the load.